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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/772,584	01/29/2001	Ravi Subramanian	I4303.0076	2348

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DICKSTEIN SHAPIRO LLP
1177 AVENUE OF THE AMERICAS 6TH AVENUE
NEW YORK, NY 10036-2714

EXAMINER	
PARK, ILWOO	

ART UNIT	PAPER NUMBER
2182	

MAIL DATE	DELIVERY MODE
11/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/772,584	SUBRAMANIAN ET AL.	
	Examiner	Art Unit	
	ILWOO PARK	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16,37-66,85-90 and 99-101* is/are pending in the application.

4a) Of the above claim(s) *37-50 and 85-90* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16,51-66 and 99-101* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/3/2008 have been fully considered but they are not persuasive.

In the Remarks, Applicant argues in substance that the RRUs 12 of Sharrit do not operate autonomously, but are instead controlled by controller 16 in contrast to Applicant's alleging that the at least one kernel operates autonomously not only with respect to other kernels but also with respect to all other circuitry.

The Examiner respectfully disagrees. Since the contents, such as "operates autonomously with respect to all other circuitry", "independently from any circuitry outside of the computing element", and/or "independently of a system processor" are not included in the claims, even though the limitation '*with respect to the other of the plurality of kernels*' was removed from the claims, the claimed limitation "the at least one kernel to operate autonomously" **still** could be interpreted 'the at least one kernel to operate autonomously with respect to the other of the plurality of kernels' or 'the at least one kernel performs any operation performed independently from the other plurality of kernels not necessarily independently from a system processor' as pointed by the Board. Thus, the arguments are not persuasive and the Examiner respectfully maintains the rejections.

2. Claims 1-16, 51-66, and 99-101 are presented for examination. Sharrit et al were cited in the last office action.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-16, 51-66, and 99-101 are rejected under 35 U.S.C. 102(e) as being anticipated by Sharrit et al. [US 5,999,990].

- As to claims 1 and 51, Sharrit et al teach in a processor [communicator 10 in fig. 1] having a plurality of kernel planes [e.g., controller 16 and RRUs block 13 in figs. 1, 4, and 5] with a plurality of kernels [e.g., reconfigurable resources units (RRUs) 12a-12n in the RRUs block 13 in fig. 1] for processing data in a communication device [col. 2, lines 3-5], at least one kernel [e.g., RRU 12a in fig. 1] of the plurality of kernels comprising:

  an interface [signal bus 14 in fig. 1 and col. 2, lines 31-34] adapted to receive and transmit information from the at least one kernel;

  a satellite kernel [e.g., block including DSP (digital signal processor) 42 and RAM 44 in fig. 2 or FPGA (field programmable gate array), DSP in figs. 3 and 4; col. 6, lines 23-29] coupled to the interface, the satellite kernel performing a discrete class of operations [col. 3, lines 13-22; col. 4, lines 58-61] within a communications application; and

  a local controller [DSP 42 in fig. 2 or GPP (general purpose processor) 48, 60 in figs. 3 and 4] coupled to the interface and the satellite kernel, and the local controller

permitting the at least one kernel [RRU 12a] to operate autonomously [col. 5, lines 41-43; col. 6, lines 14-22; col. 2, lines 35-43; col. 5, lines 8-14].

- As to claims 2 and 52, Sharrit et al teach the satellite kernel is configurable to perform a specific sub function within the class of sub functions [col. 5, lines 10-17].
- As to claims 3 and 53, Sharrit et al teach the satellite kernel is reconfigurable from a first sub function to perform a second sub function within the discrete class of operations [col. 7, lines 28-44; col. 6, lines 29-35].
- As to claims 4 and 54, Sharrit et al teach the satellite kernel is reconfigurable only within the class of operations [col. 2, lines 35-50].
- As to claims 5 and 55, Sharrit et al teach the satellite kernel includes a plurality of electronic devices for performing arithmetic, logic, and storage operations, the plurality of electronic devices coupled to each other and to the local controller in a fixed manner for implementing functions common to the class of operations, the plurality of electronic devices coupled to each other in a reconfigurable manner for implementing functions unique within the class of operations [col. 5, line 58-col. 6, line 13].
- As to claims 6 and 56, Sharrit et al teach the electronic devices are coupled to each other using a reconfigurable logic technique, a reconfigurable datapath technique, a reconfigurable dataflow technique, or a reconfigurable control technique for the discrete class of operations performed by the satellite kernel [col. 5, line 58-col. 6, line 13].

- As to claims 7 and 57, Sharrit et al teach the electronic devices are coupled to each other using a heterogeneous combination of the reconfigurable logic technique, the reconfigurable datapath technique, the reconfigurable dataflow technique, or the reconfigurable control technique [col. 5, line 58-col. 6, line 13].
- As to claims 8 and 58, Sharrit et al teach the reconfigurability of the at least one kernel is established on a temporal basis, a logical basis, or a functional basis [figs. 6-7].
- As to claims 9 and 59, Sharrit et al teach the class of operations is based upon a desired level of performance for the application [col. 3, lines 23-35].
- As to claims 10 and 60, Sharrit et al teach the discrete class of operation is an algorithm [col. 8, lines 41-53].
- As to claims 11 and 61, Sharrit et al teach the class of operations is limited to a class of mathematical field operations [col. 8, lines 41-53].
- As to claims 12 and 62, Sharrit et al teach the application within which the operations are used is a wireless communications application [fig. 1].
- As to claims 13 and 63, Sharrit et al teach the operations used in the wireless communications application include modem operations and codec operations [col. 5, lines 18-32; col. 7, lines 15-27].
- As to claims 14 and 64, Sharrit et al teach the local controller manages the satellite kernel autonomously from circuitry outside [col. 4, lines 9-27].
- As to claims 15 and 65, Sharrit et al teach the satellite kernel includes a computing element at a lower hierarchical level than the satellite kernel [fig. 4].

- As to claims 16 and 66, Sharrit et al teach the satellite kernel includes a plurality of selective interconnects coupling the plurality of electronic devices [col. 5, line 58-col. 6, line 13].
- As to claims 99-101, Sharrit et al teach the local controller permits the at least one kernel to operate autonomously [col. 5, lines 41-43; col. 6, lines 14-22; col. 2, lines 35-43; col. 5, lines 8-14] with respect to the other [e.g., RRU 12b in fig. 1] of the plurality of kernels and any other circuitry [e.g., user interface 24 in col. 5, lines 17-32] within the processor, the communication device, or the electronic device.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ilwoo Park whose telephone number is (571) 272-4155. The examiner can normally be reached on Monday through Friday from 9:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ilwoo Park/
Primary Examiner, Art Unit 2182
November 10, 2008